

## **Title: DEVELOPMENT OF AN ONLINE DATABASE OF LABORATORIES FOR MEASUREMENT OF EXPOSURE BIOMARKERS (MEB-Lab)**

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**Background and Objective:** Environmental epidemiology is a rapidly expanding field, fostered by the ever-increasing capacity to measure internal exposure to environmental chemicals. Researchers are often frustrated in their search for the best laboratory for their analyses of these chemicals in blood or urine. We have developed a Web-based database of laboratories capable of measuring exposure biomarkers (MEB-Lab database) and offer it as a resource to the community of environmental scientists.

**Methods:** Information for the database was initially gathered from the websites and other printed materials of relevant laboratories across the USA. To augment this information, we contacted these laboratories asking for additional details. Data elements requested include the laboratory location, contact information, website url, chemical biomarkers measured, analytic technique, limits of detection specific to the biologic media, and laboratory publications.

The backend of the system was developed using a MySQL platform, and the frontend interface was developed using HTML, Javascript and Perl. After an iterative process of user needs assessment by local experts, we designed the web interface to enable users of the system to invoke simple standard queries. Queries generate information about laboratories capable of measuring a specified environmental biomarker or class of biomarkers, or information about the biomarkers measured by a specified laboratory.

**Results:** The MEB-Lab database currently contains detailed information from 42 laboratories, each linked to 154 environmental biomarkers within 13 chemical classes. Initial testing indicates that the system functions as intended. The database can be accessed through the University of Cincinnati Center for Environmental Genetics website <http://www.eh.uc.edu/ceg/>.

**Conclusions:** The MEB-Labs online database is a first-of-its kind, openly accessible resource that addresses a need of the environmental epidemiology community. Ongoing work includes continued communication with laboratories and the addition of an online evaluation module that prompts users to provide feedback to improve future versions of the system.

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